

Susquehanna Project
Resolution of Water Quality Issues

Residents Outside Lawsuit and In Affected Area															
Resident	Associated Gas Well Site	Associated Gas Well Site Distance, Feet	Drinking Water (Weekly Delivery)			Bulk Water				Gas Vent Installed (Y/N)	Initial Reason for Water Delivery	Litigant	Data Evaluation	Comments / Update	Spigot Installed by Cabot
			16-oz Case	4-Gal Case	5-Gal Jug	Tank Size	Hook-up Date	Approx. Daily Usage	Refill Frequency						
Ex. 6 - Personal Privacy	Hibbard 2/4	983	1	1	--	(1) 550-gal	12/23/2009	75	Every Other Day	N	Brownish Water	N	Spring Water (from hand-dug well) - Methane 0.00012 ppm (2-2010) Water quality meets standards except for high coliform, TDS, Al and Fe. Most recent samples collected 07/15/10 9/10/10 results indicate much lower coliform levels (but still > 0) - during our meeting on 9/9/10 [redacted] had stated that he had chlorinated the well with bleach and this is likely the result. Total lead and iron are high - dissolved lead and iron are below MCLs. Some metals results missing (Al and Sr - Quantum stated left off of list due to change over to new standard list - are checking to see if possible to retrieve from instrument) Nitrate levels below standard but ppm level present indicative of agricultural influence	Met with [redacted] and sons [redacted] on 09/09/10 at 0900 hours to discuss water quality issues and potential treatment options. They were receptive to a permanent treatment solution and [redacted] expressed a desire to keep her hand-dug well. We are going to collect some additional samples to define the correct treatment technology. Sample collected on 9/10/10 and will rush results. Sample results need finalized and path forward determined as to whether to offer system, well or other	N
Ex. 6 - Personal Privacy	Teel 5	1,300	2	2	--	(2) 210-gal	12/29/2009	125	Daily	N	Brownish Water	N	No Predrill data (> 1,000 ft) - Methane 22 ppm (12/2009) and 07/15/10 = 14 ppm. Ba, Mn, TDS and methane exceed standards. Most recent samples collected 07/15/10 9/22/10 data - all results less than applicable standards and methane at 0.004 ppm. Note some total metals results high due to elevated TSS but dissolved values OK	Met with [redacted] on 09/09/10 at 1800 hours to discuss water quality issues and potential treatment options. He was amenable to moving forward with installation of a treatment system. Will collect additional sample to fine tune treatment system. Sample collected on 9/10/10. Decision made 9/16/10 to ask [redacted] if he was receptive to installing new drinking water well on his property. [redacted] very receptive to this option. Prepared to install well on 09/17/10. Began well installation 9/18/10, well bit stuck at 100 ft and well had to be abandoned. New well drilled to depth on 9/21/10 with no issues and subsequently developed. Well sampled on 9/22/10 and submitted to Quantum and TestAmerica for analysis. Analytical results meet standards with exception of Total Al, Fe, and Mn. Will continue to exercise well to lower TSS and Turbidity and will resume. Will install filter if total metals do not fall in line with standards. Drake Drilling chlorinated well on 10/6/10 as BMP. Well purged on 10/7/10. Sample collected by Quantum on 10/8/10. Well tied in to house and final grading and restoration completed 10/11/10. Filter installed on 10/12/10 and sample to be collected to represent water to be used by [redacted]	Y
Ex. 6 - Personal Privacy	Teel 5	1,300	1	1	--	--	--	--	--	N	Barium in Water	N	No Predrill data (> 1,000 ft). Did not want a bulk water tank. Methane at 23 ppm on 01/25/10 and 23 on 07/13/10. TDS, Ba, and Mn exceed standards. Most recent samples collected 07/13/10. 9/10/10 data - TDS, barium and manganese above standards. Total and fecal coliform present at low levels (3 cfu/ 100mL). Methane present at 16 ppm. 10/2/10 data - mid-effluent results indicate an approximate 10x reduction in methane (2.9 ppm) with final effluent an approximate 100x reduction (0.29 ppm). Barium and TDS above standards (dissolved minerals not expected to be removed by primary system and will be treated separately). Total and fecal coliform present at 54 cfu/100mL.	Met with [redacted] at 1100 hours on 09/08/10. Happy with Cabot. Looking for long-term treatment options for drinking water. We reviewed various treatment options. We are in process of collecting additional analytical for Total and Dissolved Metals to refine best treatment option for [redacted]. Sampling conducted on 09/10/10. [redacted] and electrical contractor met with Char to discuss power hookup and placement of treatment system on 9/15/10. Need to confirm that treatment shed can be placed beneath power lines on property. Shed to be delivered to [redacted] on 9/17/10. Placement of shed beneath power lines not allowed by power company and shed location to be adjusted. Plans for treatment system submitted to COG on 9/17/10. As of 9/22/10 shed insulated and major components in process of being installed. Hydrant installed on well to allow connection to water treatment system 9/24/10. System completed at Parrish facility 9/24/10 and moved to Mrs. [redacted] for startup and testing. Mechanical and electrical issues encountered during testing and decision made to return to [redacted] facility to diagnose and fix problems. Mrs. [redacted] pleased with effort and is understanding of initial shutdown issues. Expectation is to return system to [redacted] residence early week of 9/27 to resume installation and testing. System re-mobilized to site 10/1/10. Dissolved methane result collected from midpoint between 1st and 2nd aeration units 10/2/10 and final effluent collected for all parameters. Results show marked (approximately 100x) reduction in methane. Need to follow-up on ozonator operation. As of 10/13/10, COG has not granted approval of treatment system design - comments have been received and are being addressed. Installation to be completed following COG approval.	N
Ex. 6 - Personal Privacy	Ratzel 1/2/3	657	2	2	--	--	--	--	--	Y	Methane Gas	N	Methane at 20 ppm on 03/04/10 and 04/15/10 and 22 ppm on 07/13/10. Methane and coliform exceed standards. Most recent samples collected 07/13/10	Met with wife [redacted] and his wife on 09/10/10 at 1400 hours to discuss water quality issues and potential treatment options. They were in agreement to move forward with installation of treatment system. No additional sampling is required and [redacted] to contact week of 9/13 to discuss treatment shed style and locations. [redacted] met with [redacted] on 9/15/10 to discuss treatment system location and power hookup for [redacted] and their parents [redacted] properties. Permits completed 9/23 for presentation to COG pending signature of resident. Signatures from [redacted] expected to be obtained 9/27/10 and permits submitted immediately following. As of 10/11/10 treatment shed is insulated, explosion-proof room installed, equipment installed and electrician currently performing electrical work	N

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Ex. 6 - Personal Privacy			2	2	--	--	--	--	--				Ex. 6 - Personal Privacy	on 09/10/10 at 1400 hours to discuss water quality issues and potential treatment options. They were in agreement to move forward with installation of treatment system. No additional sampling is required and no response to contact week of 9/13 to discuss treatment shed style and location. I met with [redacted] on 9/15/10 to discuss treatment shed location and power hookup for both her and her parents properties. Permit was submitted 9/23 for presentation to COG pending signature of resident. Signatures from [redacted] expected to be obtained 9/27/10 and permits submitted immediately following. As of 10/11/10, treatment shed is insulated and explosion proof room is being installed.	N
Ex. 6 - Personal Privacy	Ratzel 1/2/3	707	2	2	--	--	--	--	--	Y	Methane Gas	N	Ex. 6 - Personal Privacy	I share the same well - Methane 16 ppm (05/04/10) and 9.1 ppm (07/13/10). Mn exceeds standard. Most recent samples collected 07/13/10.	
Ex. 6 - Personal Privacy	Ratzel 1/2/3	782	2	2	--	--	--	--	--	Y	Methane Gas	N		Methane of 22 ppm on (03/06/10 and 07/15/10). Mn exceeds standard. Most recent samples collected 07/15/10.	N
Ex. 6 - Personal Privacy	Baker 1/3	2,300	2	2	--	--	--	--	--	N	"Funny" Odor	N		Methane 00221 ppm (03/22/10) and 0.00044 ppm (07/08/10). No drilling impact is apparent. Only Total Coliform exceeds standards. Most recent samples collected 07/08/10. Owners requested 3rd party testing (need to confirm with author of this note).	N
Ex. 6 - Personal Privacy															
Ex. 6 - Personal Privacy	Lewis 2	620	--	--	--	--	--	--	--	N	Smelled like brine water	N		Appears no drilling impact. No parameters exceed standards. Most recent samples collected (02/28/10). Owners requested 3rd party testing (need to confirm with author of this note).	N
Ex. 6 - Personal Privacy	Black 1/2/3V	800	6	6	6	--	--	--	--	N	Black Seepage from Black Gas Well	N		Residence supplied by Spring Water. Most recent samples collected 06/24/10. Coliform exceeds standards, but appears to be no drilling impact. Most current results are consistent with pre-existing conditions relative to pre-drill sampling results. Initial contact 8/5/10 (by [redacted]). Sending test results to Sickler 7/27/10 (last sample ever in database) - data indicates high levels of total and fecal coliform; pH low but consistent with historical pre-drill values. No other parameters above standards.	N

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Ex. 6 - Personal Privacy	Baker 1/3		--	--	--	--	--	--	--	--	Y	Methane Gas	N	Only 2 data points to-date. No parameters exceed standards. Most recent samples collected 02/20/09	At PADEP request, Cabot added a vent stack => Groundwater well located in basement of home. Home for sale. No Residents. Received call back on 9/13/10 from previous VMs and discussed available water quality data. Last data collected 2/20/09 - she stated that turbidity/mild odor occurred earlier this year; however, she stated that there was no difference between the water now than historically. Discussed collecting additional sample week of 9/13/10. Meeting to be scheduled following receipt of results to discuss. Quantum has not been able to contact [REDACTED] to coordinate sampling for week of 9/13/10. They will schedule sampling as soon as possible following contact with [REDACTED]. To date, multiple efforts by Quantum to contact [REDACTED] have been unsuccessful. Confirmed as of 10/13/10 repeated attempts and voice messages have been left with no response.	N
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Ex. 6 - Personal Privacy	Ratzel 1/2/3	1,200	--	--	--	--	--	--	--	--	Y	Methane Gas	N	Methane of 24 ppm on 04/19/10 and 18 ppm on 07/22/10 Exceedences include Ba, Fe, Mn, and Methane. Most recent samples collected 07/22/10 Sampled 9/17/10 - dissolved Ba and Mn above standards. Methane present at 25 ppm	Contacted [REDACTED] on 09/08/10 at 2030 hours. Reviewed analytical data to-date and treatment options. Path forward will include another round of sampling. Quantum scheduled to conduct sapling 9/17/10. Samples will be analyzed for a full list of pre-drill parameters including sulfates and dissolved metals. Treatment options will likely include methane aerator and filter system. Sampling conducted 9/17/10. According to Loren Salzman (10/11/10 e-mail), Mr [REDACTED] has been told by PADEP that Cabot treatment system does not work and as a result, he is leaning towards PADEP backed water line solution. Need to coordinate with [REDACTED] for options. [REDACTED] has offered to allow [REDACTED] to look at his system once it is operational.	N
Ex. 6 - Personal Privacy	Lewis 2	968	2	6	1	(2) 325-gal	4/28/2010	150 Gal	Daily	N		CO&A Affected Water Supply -- "scoopy" water	N	Methane 48 ppm 8/13/09 Most recent samples collected in April 2010. All parameters meet standards. Methane was 2.6 ppm. Note April 2010 data not in database.	Prepared Work Plan. As of 09/08/10, need to obtain final approval from the [REDACTED]. They have designated [REDACTED] to be their Environmental Consultant; however, he is a witness for the plaintiffs. Cabot is going to protect [REDACTED] involvement with the execution of the Work Plan. Also, still need to finalize Extended Parameter List with TestAmerica. The [REDACTED] have requested the installation of a spigot at their wellhead on 09/08/10. GL Parrish to coordinate with the [REDACTED] on 09/09/10 to install spigot. Spigot scheduled to be installed on 9/17/10. Spigot installation completed 9/17/10.	Y
Ex. 6 - Personal Privacy	Lewis 2	766	3	2	--	--	--	--	--	N		CO&A Affected Water Supply	N	Per Quantum - samples collected 10/13/10	Reconditioned well in May 2010. Installed filter. Analytical parameters for effluent meet Odour quality standards. Used plumber of [REDACTED] choice to plumb the well water back into the [REDACTED] home. Plumbing work completed 9/18/10 and well-line chlorination completed 9/20/10. Bulk water discontinued. Will evaluate next round of samples to ensure that bacteria suite meets drinking water standards; if so, will discontinue supplied drinking water. Sample collected 10/13/10.	Y

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